www.myheatworks.com

INSTALLATION & USER MANUAL

HEATWORKS
MODEL 1

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MODEL 1

PLEASE READ THESE INSTRUCTIONS THOROUGHLY AND COMPLETELY PRIOR TO INSTALLATION AND USE. FAILURE TO DO SO COULD RESULT IN PROPERTY DAMAGE, SERIOUS INJURY, OR DEATH. IMPROPER INSTALLATION OR USE WILL VOID YOUR WARRANTY.

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INTRODUCTION

The Heatworks MODEL 1's innovative and patented technology makes it the most energy efficient and water saving tankless water heater in the world. Save up to 40% of energy costs devoted to heating water and 10% of water usage. The MODEL 1 is the first water heater to accept preheated water, creating three new water-heating applications (booster, extender, and turbocharger). These three applications will significantly augment the performance of any existing water heating system in the world, and will also serve as a backup water heater if your current water heating system fails.

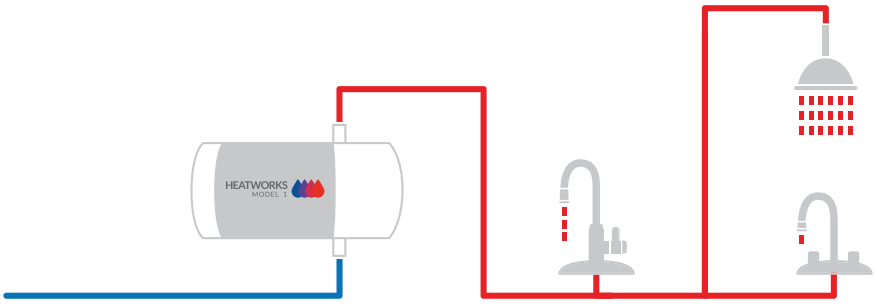
APPLICATIONS FOR THE HEATWORKS MODEL 1

The MODEL 1 can act not only as a high performance centralized water heating system, but can also serve in three new applications to augment existing water heaters. It connects to the existing plumbing, but may require some extra electrical work.

EXISTING WATER HEATER REPLACEMENT

CENTRALIZED

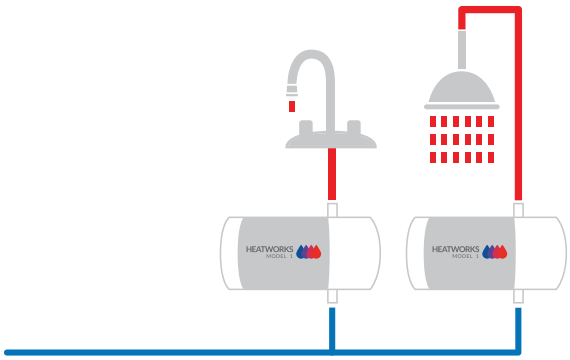
Install one or more* MODEL 1s in the location of your current water heater. This will offer immediate energy savings by nearly eliminating standby heat loss, and free up a significant amount of space wasted by a tank water heater.



* When installing two or more MODEL 1s in a centralized location, their water connections should be made in parallel, not series.

DISTRIBUTED

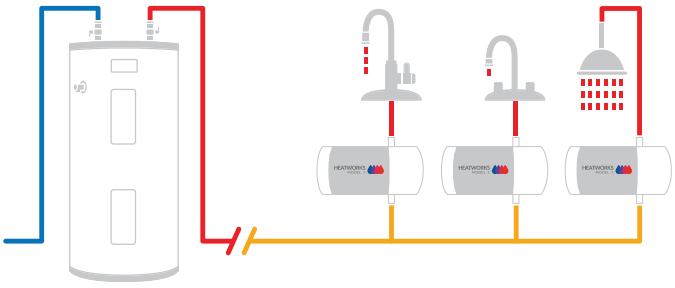
Remove your current tank system and install MODEL 1s at or near each point of hot water use. In a new construction scenario, it should be noted that the builder will only have to run cold water pipes throughout the structure rather than hot and cold water pipes. This installation is actually more economical and more effective than a traditional single (centralized) tank-type water heater. This type of distributed configuration is the flagship scenario for energy and water conservation, offering up to a 40% energy savings and a 10% water savings.



EXISTING WATER HEATER IMPROVEMENT

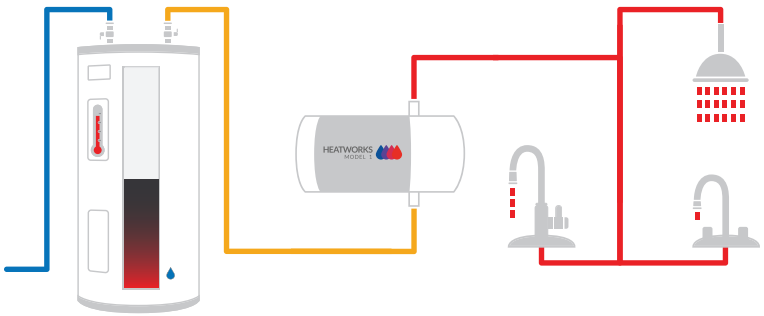
IN-LINE REMOTE BOOSTER

Eliminate the wait time for hot water from your existing system by placing MODEL 1s close to a point of use in line with the existing hot water plumbing. The MODEL 1 will provide instant hot water. When the heated water from the existing water heating system (gas, electric, tank or tankless) eventually arrives, the MODEL 1 automatically powers down. This saves water that would have otherwise gone down the drain during the wait period, and offers the luxury of truly instant hot water. Energy will also be saved simply because the MODEL 1 has a higher efficiency rating than a tank-type water heater.



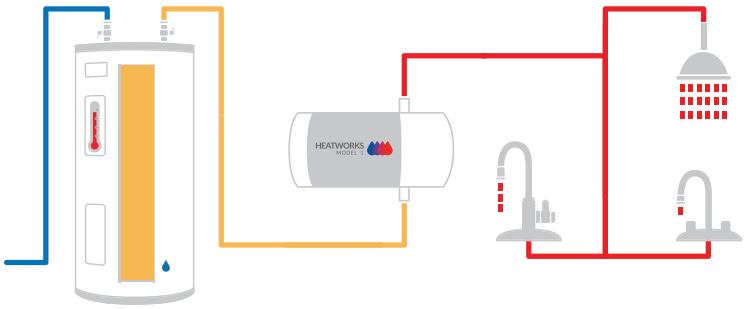
IN-LINE EXTENDER

Install the MODEL 1 in line with the outlet plumbing of any tank-type water heating system to keep the water temperature constant as the stored hot water in the tank is used. This application will provide unlimited hot water and maintain constant water temperature with minimal modification to your existing system.



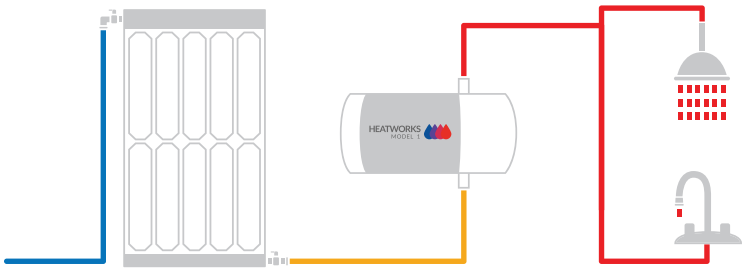
IN-LINE TURBOCHARGER

Installation is the same as in the extender application, however in this scenario the existing tank temperature must be reduced. The MODEL 1 will then heat the water up to its final temperature on demand. This saves a substantial amount of energy and provides consistent and accurate temperature control. The turbocharger application could also be used at each point of hot water use in a distributed installation to provide additional water savings.



SOLAR HOT WATER BOOSTER

Eliminate the wait time for hot water from your solar heating system by placing one or more MODEL 1s on the outlet side of a solar water heater, in line with the existing hot water plumbing. The MODEL 1 will provide instant hot water to supplement your solar heater during poor sun conditions. When the heated water from the existing water heating system (gas, electric, tank or tankless) eventually arrives, the MODEL 1 automatically powers down. This saves water that would have otherwise gone down the drain during the waiting period and offers the luxury of truly instant hot water.



IMPORTANT SAFETY INFORMATION

When installing or using any high voltage electrical appliance, basic safety precautions should always be followed. Under no circumstances should you attempt to clean, install, inspect, or service this water heater without first shutting off all power to the unit directly at the breaker box.

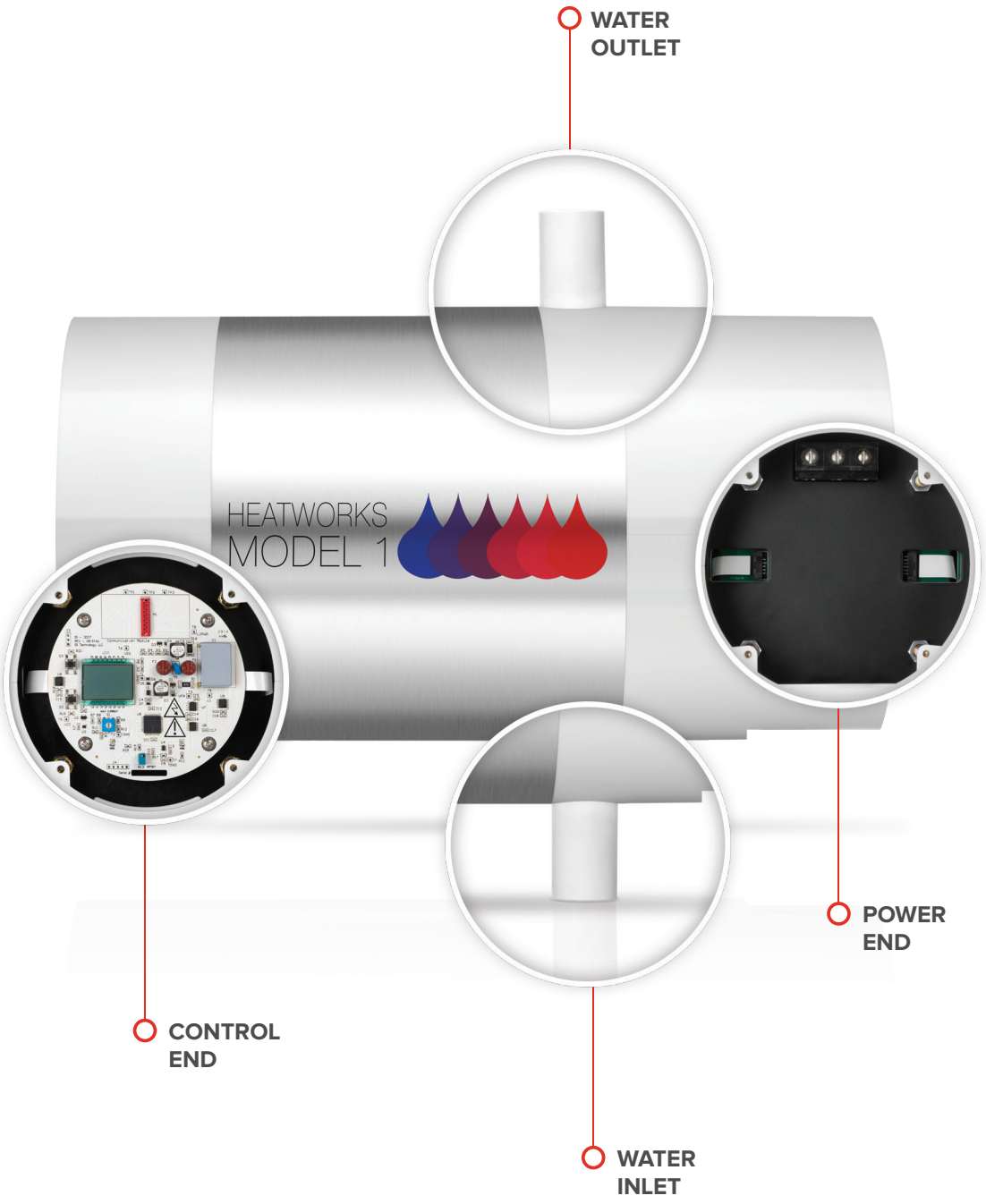
TURN OFF CIRCUIT BREAKER AND WATER SUPPLY BEFORE BEGINNING INSTALLATION. SERIOUS BODILY INJURY OR DEATH MAY OCCUR IF YOU IGNORE THIS WARNING.

This product must be installed by a qualified electrician and plumber in accordance with all national, state, provincial, and local electrical and plumbing codes. This water heater was tested prior to shipping with both water and electrical connections, simulating a standard installation.

MODEL 1 SPECIFICATIONS

Description	Tankless water heater utilizing direct energy transfer technology. Product platform provides reliable, controllable, and immediate water heating, either as a standalone water heater or as a "booster", "extender" or "turbocharger" for gas and electric tank type, and solar water heating products. Accepts pre-heated hot water.
Domestic hot water application	Point of use and/or whole house water heating. More than one unit may be required for your application. Multiple units must be mounted in parallel, either distributed or collocated. Be sure to check with your electrician to confirm your electrical system can support the required load.
Power	Maximum current draw selectable in 5 amps increments from 15-48 amps. Depending on input voltage, resulting maximum power output can range from 1.65 kW to 12 kW.
Input voltage	Single or split-phase Operation from 110-250 VAC 50/60 Hz, and 15 – 48A
Temperature Control	Microprocessor thermostatic temperature control adjusts temperature 60 times per second.
Water Conductivity	The water source must fall within 150 to 1500 µs of conductivity.
Temperature rise (at 12kW)	41 °F @ 2.0 GPM 23 °C @ 7.6 LPM 55 °F @ 1.5 GPM 30 °C @ 5.7 LPM 82 °F @ 1.0 GPM 45 °C @ 3.8 LPM
Temperature outlet setpoint range	50 °F to 130 °F (domestic hot water use)
Temperature setpoint adjustment	Digital user interface, +/- 1 °F adjustment
Water connections	3/4" inch or 22 milimeter push-fit connectors
Operating pressure	Maximum 100 psi
Dimensions	12.5" long by 6.5" in diameter
Weight	10.5 lbs., approximately 16 lbs. installed
Certification	NRTL certified for safety & conformity
Power input control	User adjustable maximium current draw
Digital display	Digital LCD and pushbutton user interface to adjust temperature set point. The digital display can be easily adjusted from °F to °C.
Warranty	3 year warranty, with full unit exchange.
Additional Features	No annual maintenance required. Silent when operating.

OVERVIEW


WATER
OUTLET
HEATWORKS
MODEL 1
POWER
END
CONTROL
END
WATER
INLET

NORMAL OPERATION

Operating your new tankless water heater is very similar to using any traditional water heating system. However, it is very important that you carefully read all of the setup procedures, operating instructions, and tips to ensure the maximum performance and energy savings from your new water heater. We recommend that all members of the household read these Normal Operation instructions.

1. Setting the output water temperature controls on your new tankless water heater is very easy. Whenever the water heater is powered on, the digital display will show your current set water temperature.

2. Press the top button to increase the temperature setting and press the bottom button to decrease the temperature setting. The setpoint temperature will be shown on the display. You can choose a setpoint temperature between 50 °F (4 °C) and 130 °F (54 °C). To change the digital display from Fahrenheit to Celsius, simply press both buttons at the same time and release the bottom button first for °C or the top button first for °F.

3. We recommend that you set the output water temperature of your water heater at 110°F (approximately 43 °C). This will ensure you have adequate hot water to meet all of your household needs while reducing the risk of scalding and increasing your energy savings.

Note

All newer model dish washing machines are normally equipped with an internal heating element, and most clothes washing detergents are now designed for use in cold or warm water. There is no longer a need set your water heater to a temperature above 130 °F. Temperatures above this level (which most traditional water heaters are set to deliver) can cause serious scalding injuries. If you ever detect a water leak from your water heater, turn off the power to the heater, turn off the water supply, and call for technical assistance.

INSTALLATION OF YOUR MODEL 1

When installed, the MODEL 1 must be oriented horizontally, with the water inlet at the bottom and the water outlet at the top of the unit.

INSTALLATION PROCEDURE

1. Use the mounting brackets provided as a template to position the screw holes. Four screws are provided to mount the brackets.
2. Once the brackets are affixed to a flat surface, thread the two cable ties provided through the brackets.
3. Place the heater in the bracket, double check the position and orientation, and connect the cable ties.
4. Excess cable tie may be cut off.

PLUMBING INSTALLATION

Please read these instructions thoroughly and completely before installation and before use. Failure to do so could cause property damage or serious personal injury or death and will void your warranty.

Please follow all plumbing instructions carefully. This product must be installed by a licensed and qualified plumber in accordance with all applicable national, state, provincial, and local plumbing codes.

Do not solder any pipes with unit connected to pipes. We recommend use of water heater flex hoses for ease of installation.

Since this product does not use a storage tank, the use of a temperature pressure relief valve (T&P) is not required for most installations. However, a T&P valve may be required to meet installation codes in your area. If one is required, install the valve in accordance with your local codes and ensure that it operates correctly and that air is purged from the valve prior to operating your water heater.

The maximum recommended operating water pressure is 100 PSI. If your water pressure is higher than this, we recommend that a pressure reduction valve be installed on your main incoming water supply line prior to installing your tankless water heater.

Flexible water heater hoses can be used with your water heater as part of the installation. Use 3/4" inch or 22 milimeter push-fit connectors for both inlet and outlet. Serious damage to your water heater can occur if you solder any pipes to the inlet or outlet connections. Such damage is NOT covered under the warranty.

PLUMBING INSTALLATION INSTRUCTIONS

1. Turn off the main water supply to the area and run the water inlet and water outlet lines to the heater. We recommend that a manual shut-off valve (ball valve) be installed on the inlet side of the water heater so there is a convenient shut-off point available in the event that future servicing is required. Before connecting these lines to the water heater, it is extremely important to FLUSH the lines to eliminate all plumbing paste or residue caused by any previous welding or soldering. We recommend using flex water heater hoses for ease of installation.

2. Connect the outlet water line to the heater outlet marked OUTLET located on the top of the unit. Connect the inlet water line to the heater inlet marked INLET on the bottom of the unit.

3. Open a hot water source (faucet, shower, etc.) and turn the water back on to the system. Allow water to run though the water heater for at least 2 to 3 minutes. This process purges all the air from the water lines and MUST be performed prior to turning on the power to the unit. (When any maintenance is performed on the water heater or the home's plumbing system that may introduce air into the plumbing pipes, it is important to turn the power off to the water heater and purge the air out of the lines before allowing the unit to power on.)

4. Carefully inspect all connections, unions, and the pressure relief valve (if installed) for leaks.

ELECTRICAL INSTALLATION

This product must be installed by a licensed and qualified electrician in accordance with all applicable national, state, provincial, and local electrical codes. As with all electrical appliances, under no circumstances should you attempt to install this water heater without first shutting off all power to the unit directly at the fuse or breaker box. SERIOUS BODILY INJURY OR DEATH COULD OCCUR IF YOU IGNORE THIS WARNING.

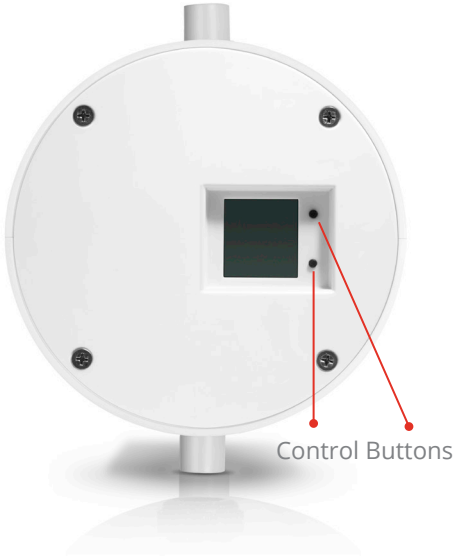
All wiring (wire gauge) and circuit protection (breakers) must comply with national and local electrical codes. Failure to do so could result in property damage and / or personal injury, and will void your warranty.

The MODEL 1 requires two line conductors and one grounding conductor. The line conductors can both be phase (split-phase installation), or one line may be phase and the other neutral.

The MODEL 1 auto senses voltage from 50 or 60 cycles (Hz) so there is no adjustment needed to set voltage.

Your MODEL 1 is preset from the factory to draw a maximum current of 15 amps. To increase the maximum current draw, follow this procedure using the two buttons and the LCD screen on the front of the unit:

CONTROL END



- Purge the MODEL 1 of air by turning on a downstream faucet or shower on the hottest, highest flow setting for several minutes.
- Power on the MODEL 1 by activating the associated circuit breaker in your electrical panel.
- Press and hold both buttons on the front of the MODEL 1.
- Release ONLY the top button while still holding down the bottom button.
- While continuing to hold the bottom button, tap (press and release) the top button five times until the number “5” appears and the display starts to blink.
- Release both buttons.
- The display will now read the maximum current setting limit. From the factory, this should read “15”.
- Use the up and down buttons to select your desired maximum current draw, anywhere from 15 to 48 amps.
- Press both buttons simultaneously and release to save the new setting.

Confirm that all air has been purged from the water lines prior to turning power on to the unit. Refer to Step 3 in the plumbing installation section.

WITH HOT WATER RUNNING (faucet, showerhead, etc.), turn on the breaker to energize the water heater. Allow the unit to run for 5 minutes before closing the hot water valve to verify that hot water is being generated.

The water heater is now installed and ready to use. Follow the NORMAL OPERATION section of this manual to set the output temperature. We highly recommend that the homeowner set the output temperature of the unit.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Water heater is not heating when hot water is flowing. The digital display does NOT turn on.	No power or incorrect wiring	Make sure the breakers at the main electrical panel are ON. You may have a faulty breaker or the unit may be wired incorrectly.
Water heater is not heating at all. The digital display DOES turn on.	Internal part failure	First try resetting the breaker. Then call us for technical assistance.
Water heater is heating but the water temperature is not hot enough.	Output temperature setting too low	Increase the temperature setting of the unit. (See NORMAL OPERATION instructions)
	Flow rate is too high	Depending on your incoming water temperature and power output of your MODEL 1, your water flow rate may exceed the physical heating capacity of your water heater. Reduce the flow rate at the faucet.
	Crossed wires	If it's a new installation, have your electrician double check the wiring. It is possible the wiring is incorrect.

MAINTENANCE

There is a small debris screen within the inlet connection of the heater to protect the unit. If you suspect that this screen may have become obstructed for some reason, simply turn off the power and water to the unit, disconnect the inlet hose, extract and clean this screen. Carefully reinsert the debris screen after cleaning and then refer back to the installation instructions.

Your newly installed MODEL 1 requires no further maintenance.

When any maintenance is performed on the water heater or the home's plumbing system that may introduce air into the plumbing pipes, it is important to first turn the power off to the water heater and purge the air out of the lines before allowing the unit to power on.

Note

If your water comes from a well, be sure to install a sand filter on the main water line entering the house.

HEATWORKS MODEL 1 LIMITED WARRANTY

WARNING: Always turn off the power circuit breakers at BOTH the main electrical panel and at the unit access panel. High voltage is present in the system. Personal injury or death can result if caution is not taken.

WARNING: Do not switch power on if there is a possibility the water in the heater is frozen.

Subject to the terms and conditions set forth in this limited warranty, each Heatworks MODEL 1 is warranted to the original Owner ("Owner") against (i) mechanical or electrical failure of any component solely due to defects in material or Manufacturer's workmanship for a period of three (3) years from the date of original purchases and (ii) leaks due to defects in material or Manufacturer's workmanship for three (3) years from the date of original purchase.

If Owner cannot document the original date of purchase with original sales receipt, then the limited warranty period begins on the date the Heatworks MODEL 1 was manufactured.
As Owner's sole and exclusive remedy, Manufacturer shall replace the Heatworks MODEL 1.

Manufacturer is not liable for any costs incurred by Owner, including, without limitations, the cost of any labor or material costs for removal, repair and/or reinstallation. Manufacturer's

maximum liability is limited to the value of the water heater. This limited warranty shall be governed by the laws of the United States.

The remedy set forth in this limited liability warranty is the only remedy available to Owner or any person for breach of any covenant, duty or obligation on the part of the Manufacturer. Manufacturer is not liable to Owner or any third party for any loss, personal injury or property damage, directly or indirectly, arising from the Heatworks MODEL 1 water heater. Under no circumstances is Manufacturer liable to Owner or any third party for incidental, consequential, special, contingent, or punitive damages of any description, whether any such claim be based upon warranty, contract, negligence, strict liability, or other tort, or otherwise.

Some states do not allow the exclusion or limitations of incidental or consequential damages so the limitations or exclusion may not apply to Owner. In such cases, the warranty shall be limited to three (3) years from the original date of purchase or date of Manufacturer, as provided in this limited warranty, or the shortest period allowed by law. This warranty gives Owner specific legal rights and Owner may also have other rights which may vary from state to state.

Exclusions of Coverage from this Limited Warranty

1. Manufacturer is not liable for any water damage or other damages arising, directly or indirectly, from any defect in the Heatworks MODEL 1 tankless Water Heater component part(s) or from its use.
2. Manufacturer is not liable under this limited warranty or otherwise if:

    a. The water heater or any of its component parts have been subject to misuse, alteration, neglect, impact, or accident; or
    b. The water heater has not been installed in accordance with the applicable local plumbing and/or building code(s) and/or regulation(s); or
    c. The water heater has not been installed or maintained in accordance with Manufacturer's instructions, or has been installed with improper orientation, improper fastening, improper use of pipe dope/plumbers putty or with the use of any sealant; or
    d. The water heater has sediment inside the unit; or
    e. The water heater experiences any water pressure or flow interruptions (normal inlet water pressure is outside of the published specification for the heater), is exposed to any condition that causes the heater to turn on before the air is purged from the heater; or
    f. The water heater has been exposed to conditions resulting from floods, earthquakes, winds, fire, freezing, lightning, or circumstances beyond the Manufacturer's control; or

g. The water heater's outer wrapper/sticker has been broken; or
h. The water heater has been used for other than the intended purpose (use with liquids other than potable water); or
i. The water heater has been tampered with, either electronics or software; or
j. If there is any disassembling of any components other than the wire connectors and end plates; or
k. The water heater is subjected to applications of DC voltage; or
l. The water heater is operated without inlet filter screen; or
m. The water heater installation exposes the unit to the elements; or
n. The workmanship of any installer; or
o. The spray head is not reguluarly descaled.

3. Owner, and not Manufacturer or its agent/representative, is liable for and shall pay for all field charges for labor or other expenses incurred in the removal and/or repair of the water heater or any NON-COVERED WARRANTY expense incurred by Owner in order to repair the water heater.

Limited Warranty voided if

a. The unit is moved from its original installation location.
b. The unit is tampered with or self-serviced in anyway.
c. The unit is installed outdoors.
d. The unit is installed in an orientation other than specified in the Installation and User Manual.
e. The unit is used with any liquids other than potable water.
f. More than 10% glycol is used with a radiant heating application.
g. The unit is used with any unapproved chemicals. Please contact Manufacturer before using any chemicals in your MODEL 1 so not to void your warranty.
h. Components/accessories not compatible with or not intend for the unit are used with the MODEL 1.
i. This unit is used in an unapproved scenario such as, but not limited to, as fish tank water heater, to heat pools or spas, with a non-compatible AC/DC converter, if under-sized for the intended application, etc. Please contact Manufacturer before using the MODEL 1 in any alternative scenarios so not to void your warranty.
j. The inlet / outlet is connected to any tap or fitting other than those specified.

Return Process

Subject to the terms and conditions set forth in this limited warranty, if the Heatworks MODEL 1 fails or leaks because of defects in materials or Manufacturer's workmanship during the applicable warranty period set forth above, Owner should contact Manufacturer for a Returned Merchandise Authorization (RMA). No returns will be accepted by Manufacturer without an RMA number and Manufacturer assumes no responsibility for a water heater returned without an RMA number. Water heaters should be wrapped and packaged securely to avoid shipping damage. The OWNER will be responsible for shipping costs of the unit in question from Owner to Manufacturer. All shipments of the Heatworks MODEL 1 from the Manufacturer to the Owner to replace a defective unit shall be made via normal ground transportation. If expedited shipment or insurance is required, it will be provided at Owner's additional cost.

Warranty Registration

In order to activate your warranty, you must register your unit. If you do not activate your warranty, your MODEL 1 may not be covered under our warranty policy.

Warranty Registration: http://goo.gl/8p3YPZ

Installation & User Notes

HEATWORKS
MODEL 1

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